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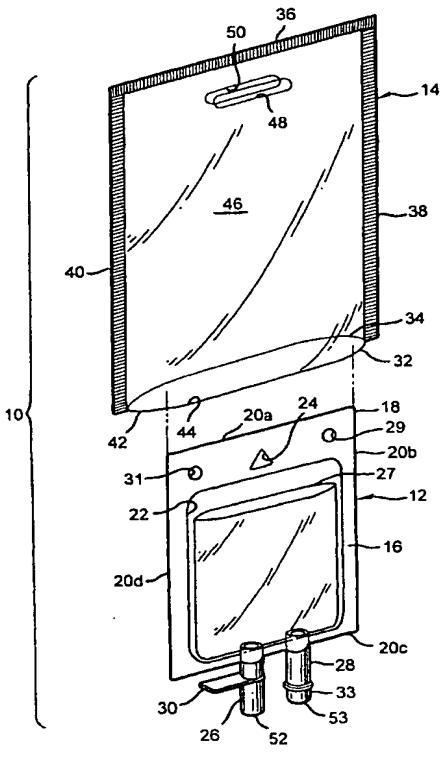
(54) Title: LIGHT-PROTECTIVE CONTAINER ASSEMBLY AND METHOD OF MAKING SAME



(57) Abstract: Light-protective container assembly for a light-sensitive fluid includes a translucent container defining an inner reservoir to contain the fluid, and a flexible sleeve connected to the container. The sleeve has a tubular configuration sized to substantially cover at least the reservoir of the container, and is made of a material capable of substantially preventing the transmission therethrough of an identified range of wavelengths from the electromagnetic spectrum. Preferably, the sleeve is made of a mixture of a base material and a colorant capable of substantially preventing the transmission of undesired energy through a predetermined thickness of the base material. The sleeve is connected indirectly to the container by providing the container with at least one passageway therethrough, and by positioning the sleeve such that a first portion of the sleeve is on one side of the container, and a second portion is on an opposite side of the container. The first and second portions are attached together through the passageway by a heat stake or fastener or the like. Preferably, the container is a flexible intravenous supply bag having a port structure at one end. A method of making the light-protective container assembly is also provided.

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CLAIMS

What is Claimed is:

1. A light-protective container assembly for a light-sensitive fluid, the assembly comprising:

a translucent container defining an inner reservoir to contain the fluid; and

a flexible sleeve connected to the container, the sleeve being made of a material capable of substantially preventing the transmission of an identified range of wavelengths of the electromagnetic spectrum, the sleeve being configured to substantially cover the reservoir of the container.

2. A light-protective container assembly in accordance with claim 1, wherein the container has at least one passageway defined therethrough, the passageway being isolated from the reservoir; and

the sleeve has a first portion and a second portion, the first portion attached to the second portion through the passageway to connect indirectly the sleeve to the container.

3. A light-protective container assembly in accordance with claim 2, wherein the first portion and the second portion are attached together by a heat stake.

4. A light-protective container assembly in accordance with claim 2, wherein the first portion and the second portion are attached together by a fastener.

5. A light-protective container assembly in accordance with claim 2, wherein the container includes a mounting structure to receive a support structure, at least one of the first portion and the second portion of the sleeve having a corresponding opening therethrough to allow access to the mounting structure.

6. A light-protective container assembly in accordance with claim 2, wherein the first portion of the sleeve is a first side wall having opposite lateral edge portions, and the second portion of the sleeve is a second side wall having opposite lateral edge portions, the lateral edge portions of the first side wall being integral with the lateral edge portions of the second side wall to define a tubular structure having at least one open end to allow the sleeve to be displaced relative the container.

7. A light-protective container assembly in accordance with claim 1, wherein the identified range of wavelengths substantially prevented from transmission by the sleeve is between about 290 nanometers to about 450 nanometers.

8. A light-protective container assembly in accordance with claim 1, wherein the container is a flexible intravenous supply bag having a port structure at one end, the sleeve being configured to extend over the port structure.

9. A light-protective container assembly in accordance with claim 8 further comprising an overwrap element to

enclose temporarily the container with the sleeve connected thereto.

10. A light-protective container assembly in accordance with claim 9, wherein the overwrap element has a translucent window defined therein.

11. A method of making a light-protective container assembly for a light-sensitive fluid, the method comprising:

identifying a range of wavelengths of the electromagnetic spectrum to which the light-sensitive fluid is susceptible to degradation;

providing a translucent container having an inner reservoir defined therein to contain the light-sensitive fluid;

producing a flexible sleeve made of a material capable of substantially preventing the transmission of the identified range of wavelengths of the electromagnetic spectrum, the sleeve being configured to cover the reservoir of the container; and

connecting the sleeve to the container.

12. A method in accordance with claim 11, wherein the producing step includes

preparing a mixture of a base material for the sleeve and a colorant capable of substantially preventing the transmission of the identified range of wavelengths of the electromagnetic spectrum through a predetermined thickness of the base material, and

forming the mixture into the sleeve so as to have one or more side walls of the predetermined thickness.

13. A method in accordance with claim 12, wherein the colorant includes a pigment formulated to prevent the summed transmission of at least about 95% of electromagnetic energy having a wavelength between about 290 nanometers to about 450 nanometers through the predetermined thickness of the base material.

14. A method in accordance with claim 11, wherein the producing step includes forming the sleeve with a first side wall having opposite lateral edge portions and a second side wall having opposite lateral edge portions, the lateral edge portions of the first side wall being integral with the lateral edge portions of the second side wall to define a tubular structure having at least one open end to allow the sleeve to be displaced selectively for visual inspection of the container.

15. A method in accordance with claim 11, wherein the connecting step is performed by

including at least one passageway through the container, the passageway being isolated from the reservoir;

positioning a first portion of the sleeve on one side of the container proximate the passageway and a second portion of the sleeve proximate an opposite side of the container proximate the passageway; and

attaching the first portion of the sleeve to the second portion through the passageway to connect indirectly the sleeve to the container.

16. A method in accordance with claim 15, wherein the attaching step is performed by heat staking the first portion to the second portion through the passageway.

17. A method in accordance with claim 15, wherein the attaching step is performed by applying a fastener between the first portion to the second portion through the passageway.

18. A method in accordance with claim 15, wherein the container provided by the providing step has a mounting structure to receive a support structure, and the producing step further includes defining a corresponding opening in at least one of the first portion and the second portion of the sleeve to allow access to the mounting structure.

19. A method in accordance with claim 11, wherein the container provided by the providing step is a flexible intravenous supply bag having a port structure at one end, the sleeve produced by the producing step being configured to extend over the port structure.

20. A method in accordance with claim 11 further comprises the step of enclosing the container with the sleeve connected thereto in an overwrap element.

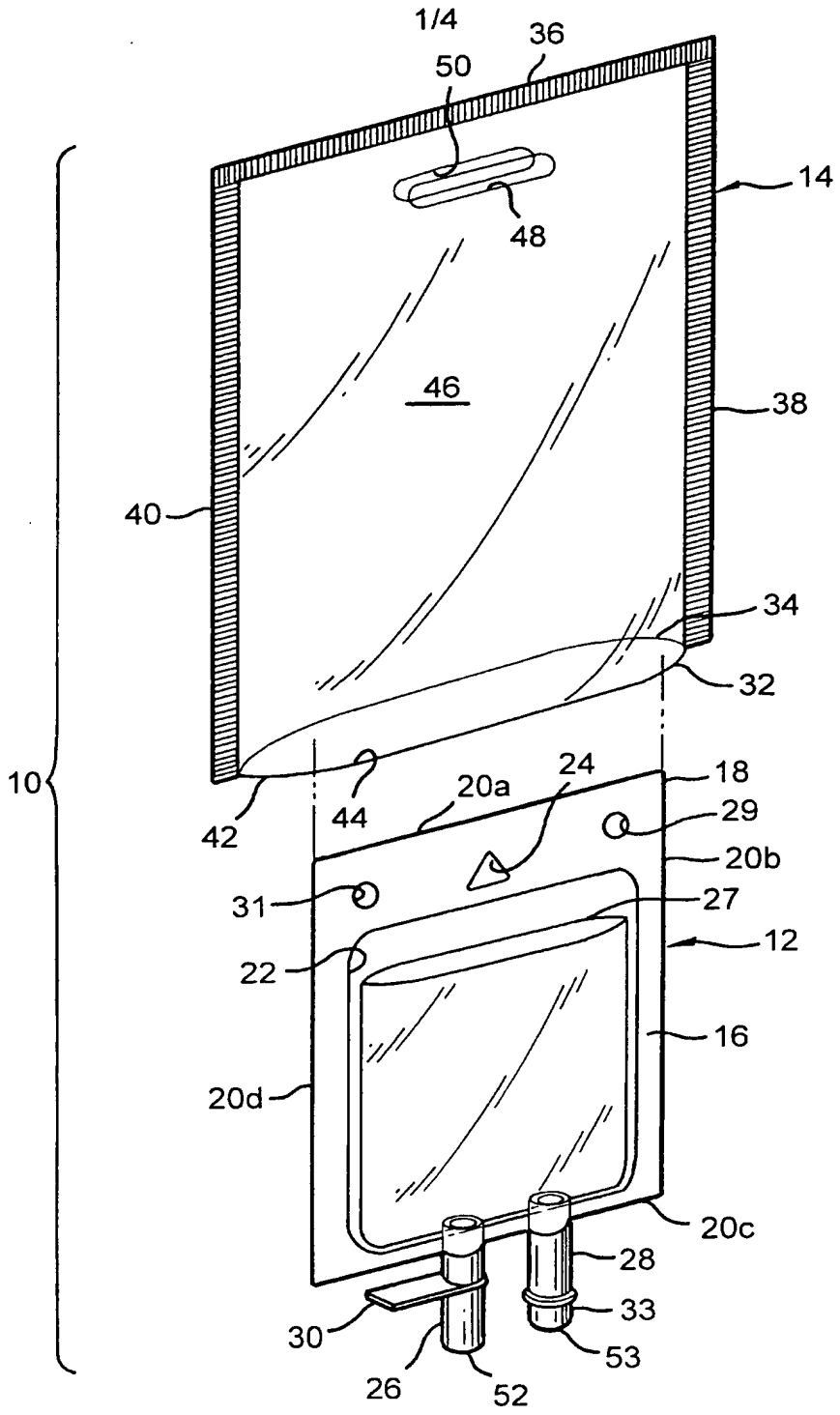
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FIG. 1

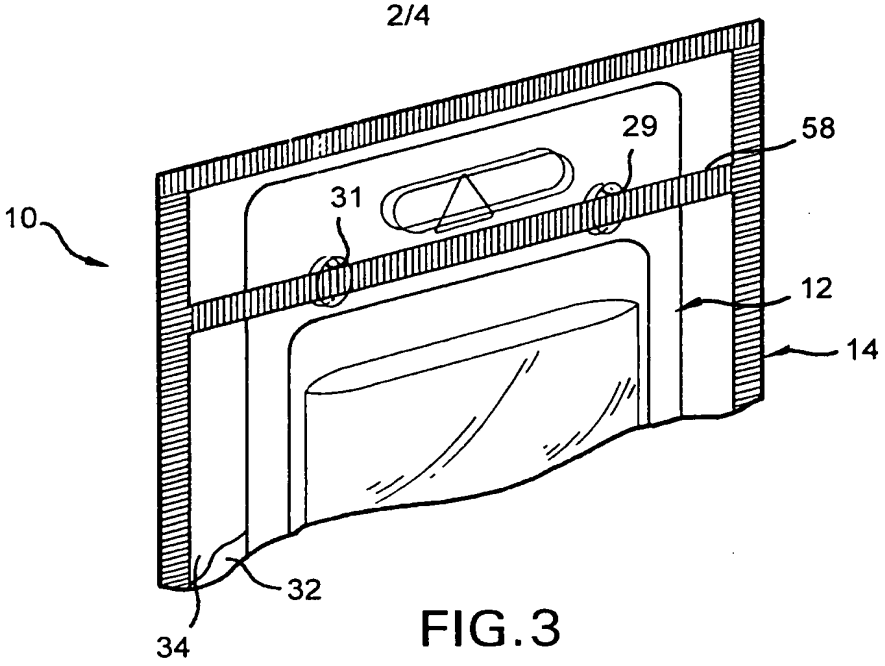


FIG.3

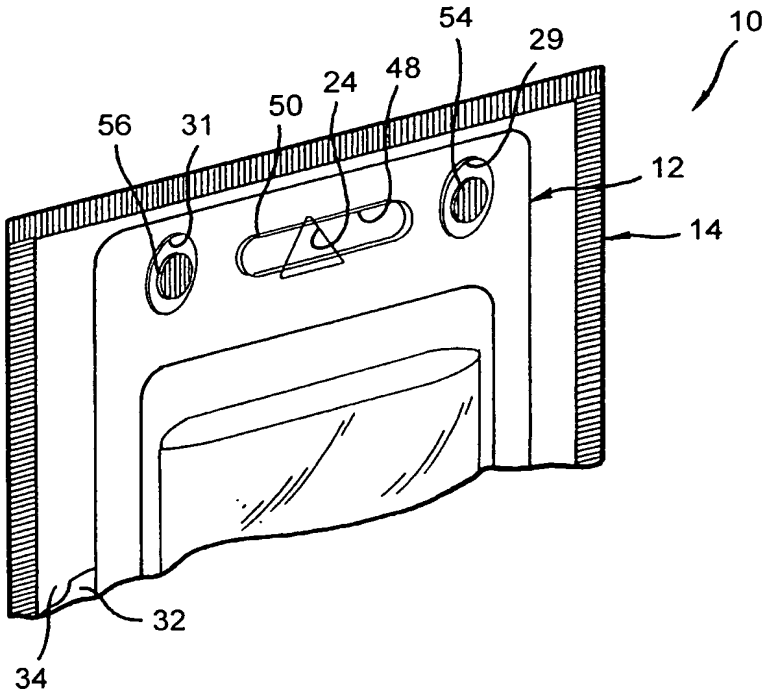


FIG.2

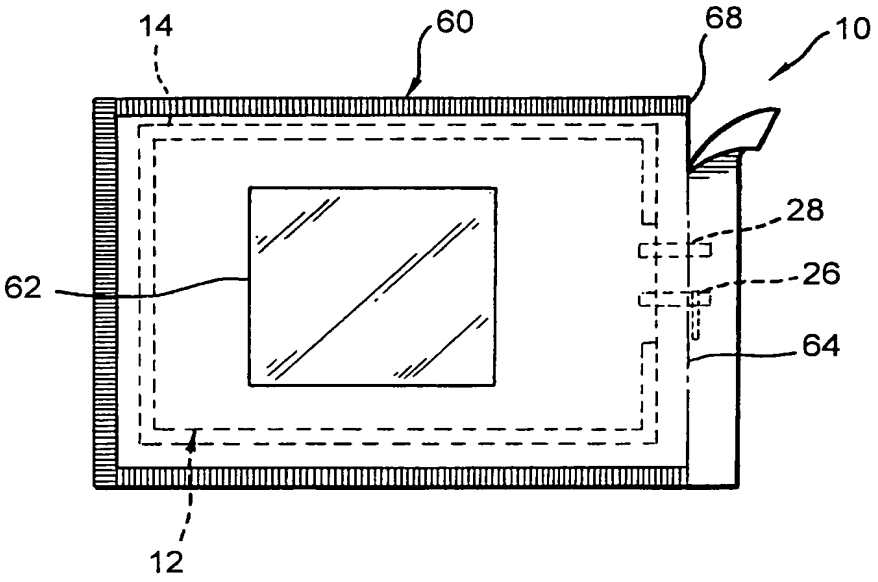


FIG.4

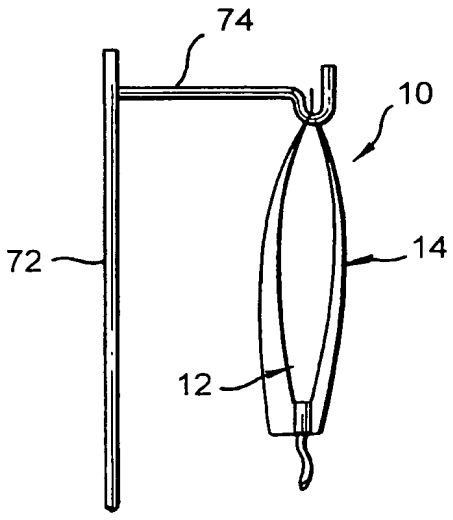


FIG.5A

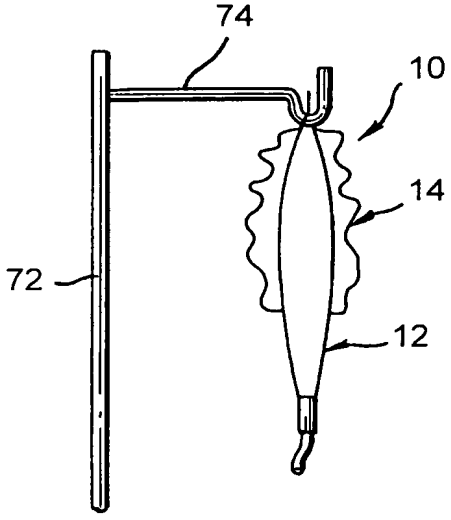
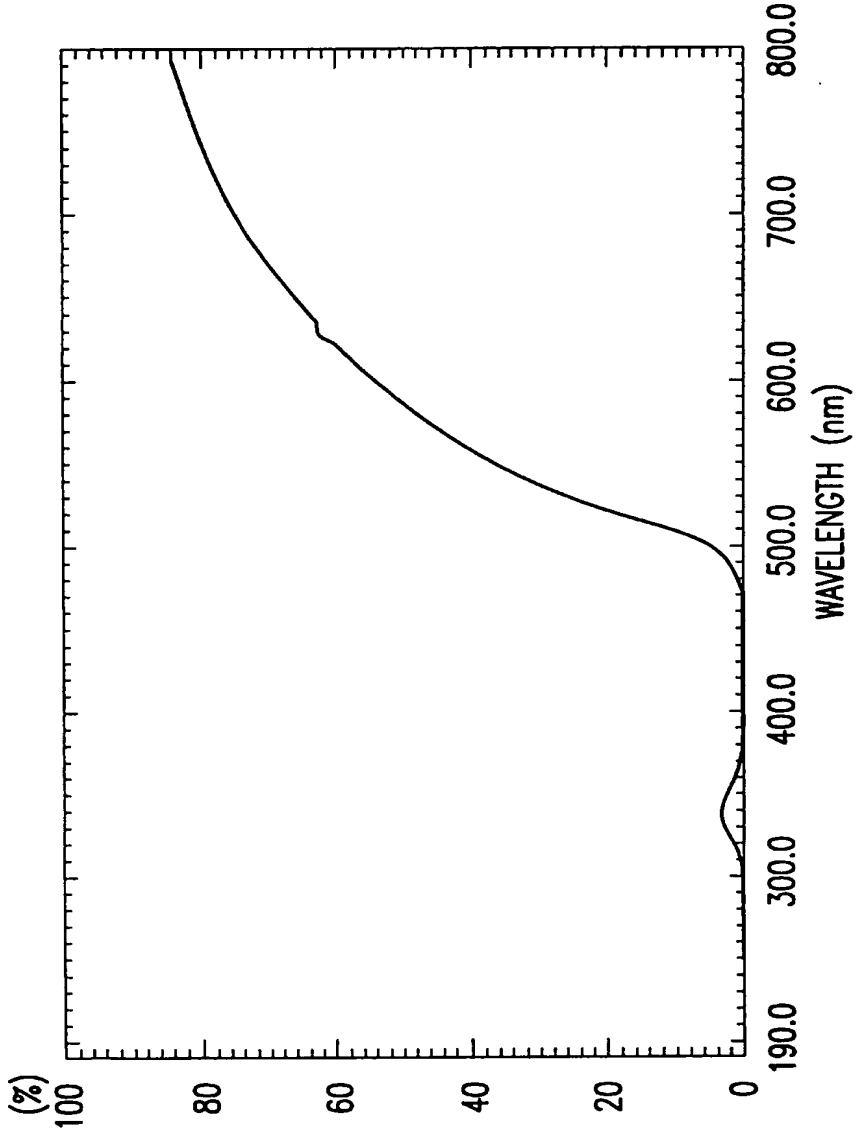


FIG.5B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700.0
600.0
500.0
400.0
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WAVELENGTH (nm)
(%)
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80
60
40
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0

FIG.6